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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,846	04/13/2001	La Vaughn F. Watts JR.	16356.604 (DC-02762)	8389

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EXAMINER

DU, THUAN N

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,846

Applicant(s)

WATTS ET AL.

Examiner

Thuan N. Du

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. It is hereby acknowledged that the following papers have been received and placed of record in the file: Formal Drawings (dated 1/8/02), IDS (dated 1/9/02), Preliminary Amendment (dated 5/10/02).
2. Claims 1-33 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. [Williams] (U.S. Patent No. 6,397,343) and Odaohhara et al. [Odaohhara] (U.S. Patent No. 6,574,740).

5. Regarding claim 1, Williams teaches a computer system comprising:

a central processing unit [CPU 502 of Fig. 5];

a graphics subsystem [graphics subsystem 400 of Fig. 5];

at least one fan disposed for providing cooling to said graphics subsystem [cooling apparatus 305 of Fig. 3; col. 10, lines 16-20]; and

a thermal manager [device 100], said thermal manager for monitoring a temperature of said graphics subsystem [col. 9, lines 19-21] and dynamically controlling a clock frequency of

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said graphics subsystem [col. 5, lines 36-37, 57-59; col. 6, lines 44-50; col. 7, lines 29-31, 38-51] and said at least one fan according to a thermal manager algorithm [col. 9, line 64 to col. 10, line 3; col. 10, lines 20-23].

Williams does not explicitly teach the above-mentioned thermal manager is used for controlling the throttling of the CPU of the system.

Odaohhara teaches a system comprising:

a CPU [CPU card 11]; and

a thermal manager for dynamically controlling a throttling of said CPU [col. 12, lines 9-19, 28-32, 42-45, 52-55].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught by Williams to include the thermal manager taught by Odaohhara to dynamically controlling the throttling of CPU (CPU subsystem) when the temperature of the CPU reaches a threshold value. The modification would increase the flexibility and the reliability of the system by allowing each of components of the system (i.e. graphics subsystem, CPU subsystem) to prevent over heated.

6. Regarding claim 2, Williams teaches that the thermal manager algorithm enables stabilization of the temperature of the graphics subsystem below a prescribed temperature threshold over a given duration of time [col. 12, lines 30-50].

7. Regarding claim 3, one of ordinary skill in the art would have recognized that a temperature threshold value could be set to any value which fits the need it. Therefore, it would have been obvious to set a temperature threshold value to a value equal to body temperature.

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8. Regarding claim 4, Odaohhara teaches that the thermal manager includes a BIOS table, the BIOS table identifying specific cooling actions to be implemented as a function of the temperature of the CPU [Fig. 7].

9. Regarding claims 5-18, claims 5-18 are directed to apparatuses implementing the thermal management system of claim 1. As stated above, Williams and Odaohhara teach the invention substantially as set forth in claim 1. At the time of the invention, one of ordinary skill in the art would have readily recognized that Williams and Odaohhara may also teach the implementations of claim 1 as set forth in claims 5-18. As such, claims 5-18 are rejected under same rationale with respect to claim 1.

10. Regarding claims 19-33, since they recite method of operating of the apparatus defined in the apparatus claims, they are rejected accordingly based on the rejection of the apparatus claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan N. Du whose telephone number is (703) 308-6292. The examiner can normally be reached on Monday-Friday: 9:00 AM - 5:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (703) 308-1159.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

The fax number for the organization is (703) 872-9306.

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A handwritten signature in black ink, appearing to read 'Thuan N. Du', with a stylized flourish at the end.

Thuan N. Du
April 30, 2004